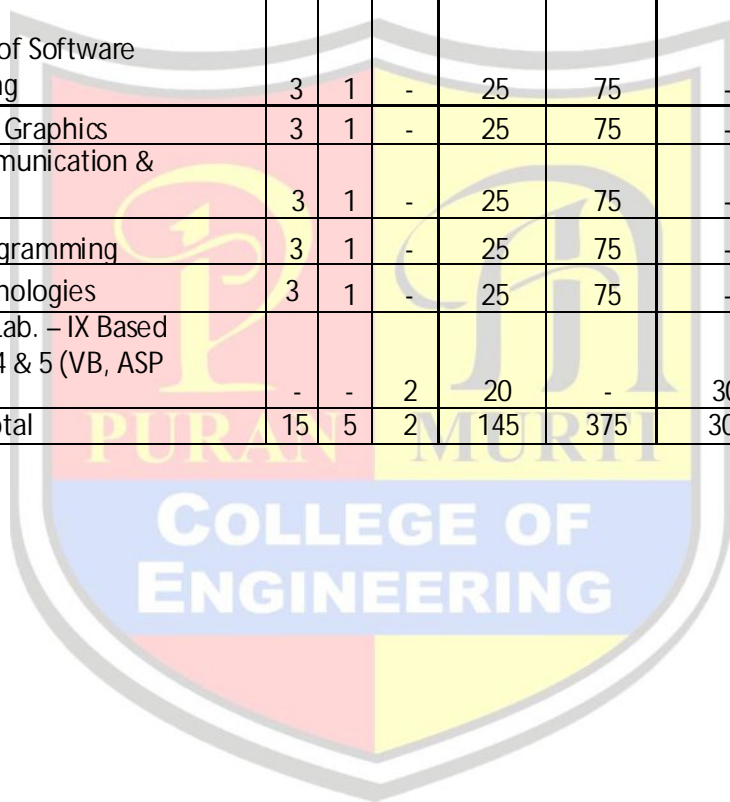




SCHEME OF STUDIES & EXAMINATIONS
Department: Bachelor of Computer Applications – 5th Semester

Sr. No	Course No.	Course Title	Teaching Schedule			Marks of class work	Examination Marks		Total	Credit	Exam Duration
			L	T	P		theory	practical			
1	BCA-301 B	Principles of Software Engineering	3	1	-	25	75	-	100	4	3
2	BCA-303 B	Computer Graphics	3	1	-	25	75	-	100	4	3
3	BCA-305 B	Data Communication & Networks	3	1	-	25	75	-	100	4	3
4	BCA-307 B	Visual Programming	3	1	-	25	75	-	100	4	3
5	BCA-309 B	Web Technologies	3	1	-	25	75	-	100	4	3
6	BCA-327 B	Software Lab. – IX Based on Sr. No 4 & 5 (VB, ASP .Net)	-	-	2	20	-	30	50	1	3
Total			15	5	2	145	375	30	550	21	





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 5th Semester

Subject: Principles Of Software Engineering (Theory)

Subject Code: BCA-301B

Detailed Content

Unit No.1 Software Crisis

Topic No.1 : Problem & Causes

Topic No.2 : Software life cycle models: Waterfall model,Prototype model,Evolutionary model,Spiral model

Topic No.3 : Cost Estimation: COCOMO model,Putnam resource allocation model

Topic No.4 : Risk management

Topic No.5 : Project scheduling

Topic No.6 : Personnel planning

Topic No.7 : Team structure

Topic No.8 : Software configuration management

Topic No.9 : Quality assurance

Topic No.10: Project monitoring

Unit No.2 Software requirement analysis & Specification

Topic No.11: Structured analysis

Topic No.12: Data flow diagram

Topic No.13: Data dictionaries

Topic No.14: Entity-relationship diagram

Topic No.15: Software requirement and specification

Topic No.16: Behavioral and non behavioral requirements

Topic No.17: Software Design: Design fundamentals,Problem partitioning & abstraction,Design methodology

Topic No.18: Cohesion & Coupling

Topic No.19: Classification of cohesiveness & coupling

Unit No.3 Coding

Topic No.20: Programming style

Topic No.21: Structured programming

Topic No.22: Software testing: Testing fundamentals

Topic No.23: Functional testing: Boundary value analysis,Equivalence class testing ,Decision table testing,Causes effect graphing

Topic No.24: Structural testing: Control flow based and data flow based testing,Loop testing

Unit No.4 Software testing strategies

Topic No.25: Unit Testing

Topic No.26: Integration testing

Topic No.27: Validation testing

Topic No.28: System testing

Topic No.29: Alpha & Beta testing

Topic No.30: Software Maintenance: Type of maintenance,Management of Maintenance,Maintenance process,Maintenance characteristics



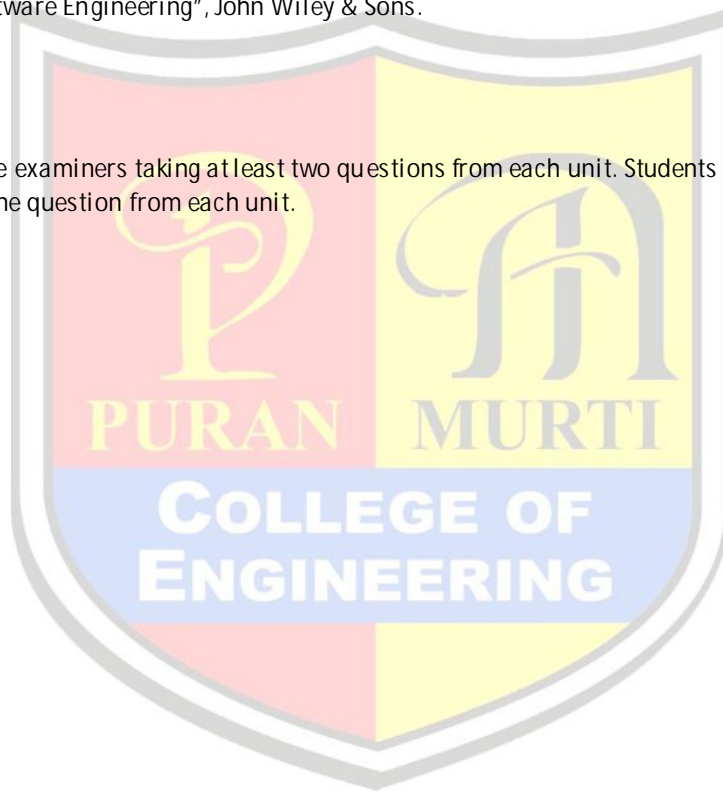
Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT/REFERENCE BOOKS:

1. Jalote P., "An Integrated approach to Software Engineering", Narosa.
2. Sommerville, "Software Engineering", Addison Wesley.
3. Fairley R., "Software Engineering Concepts", Tata McGraw Hill.
4. James Peter, W Pedrycz, "Software Engineering", John Wiley & Sons.

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 5th Semester

Subject: Data Communication & Networks (Theory)

Subject Code: BCA-303B

Detailed Content

Unit No.1 Graphics Primitives

- Topic No.1 : Application areas of Computer Graphics
- Topic No.2 : Historical background of Computer Graphics
- Topic No.3 : Computer Graphics & its types
- Topic No.4 : Display devices: Pixel,Resolution,Aspect ratio,CRT,Refresh rate & Interlacing
- Topic No.5 : Frame Buffer
- Topic No.6 : Video Controller
- Topic No.7 : Raster scan systems
- Topic No.8 : Raster scan display
- Topic No.9 : Look up table
- Topic No.10: Color CRT monitors
- Topic No.11: Random scan displays
- Topic No.12: Flat panel display: LCD,Plasma panel
- Topic No.13: Graphics monitors & workstations
- Topic No.14: Graphics input devices & hardcopy devices

Unit No.2 Output Primitives

- Topic No.15: Line drawing algorithms: DDA algorithm,Bresenham's algorithm
- Topic No.16: Circle generating algorithms
- Topic No.17: Bresenham's circle drawing algorithm
- Topic No.18: Ellipse generating algorithms

Unit No.3 2-D Geometric Transforms

- Topic No.19: Translation
- Topic No.20: Scaling
- Topic No.21: Rotation
- Topic No.22: Reflection & shear transformations
- Topic No.23: Composite Transformations
- Topic No.24: 2-D viewing: The viewing pipeline,Window to viewport coordinate transformation,Viewing functions
- Topic No.25: Cohen-Sutherland & cyrus-beck line clipping algorithms
- Topic No.26: Sutherland Hodgeman polygon clipping algorithms
- Topic No.27: Reflection & shear transformations
- Topic No.28: Composite Transformations

Unit No.4 3-D Geometric Transformations

- Topic No.29: Translation
- Topic No.30: Scaling
- Topic No.31: Rotation
- Topic No.32: Reflection & shear transformations
- Topic No.33: Composite Transformations



- Topic No.34: 3-D object representation: Polygon surfaces, Quadric surfaces, Spline representation, Hermite curve, Bezier curve & B-spline curves, Bezier & B-spline surfaces
- Topic No.35: Quadtree & octree data structure
- Topic No.36: Rendering & animation

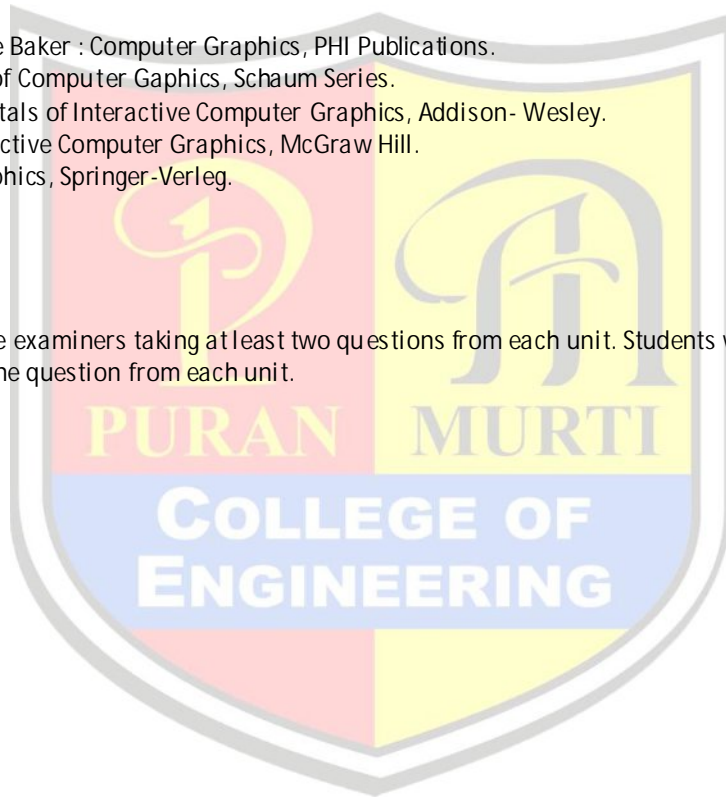
Study Scheme				Evaluation Scheme			Total Marks
L	T	P	Credits	Internal Assessment	External Assessment (Examination)		
				Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT/REFERENCE BOOKS:

1. Donald Hearn and M. Pauline Baker : Computer Graphics, PHI Publications.
2. Plastock : Theory & Problem of Computer Graphics, Schaum Series.
3. Foley & Van Dam : Fundamentals of Interactive Computer Graphics, Addison- Wesley.
4. Newman : Principles of Interactive Computer Graphics, McGraw Hill.
5. Tosijas, L.K. : Computer Graphics, Springer-Verleg.

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 5th Semester

Subject: Data Communication & Networks (Theory)

Subject Code: BCA-305B

Detailed Content

Unit No.1 Network concepts

- Topic No.1 : Goals & applications of data communication
- Topic No.2 : Network topologies
- Topic No.3 : Types of network: LAN,MAN,WAN
- Topic No.4 : Data communication Concepts: Component of data communication system,Transmission modes
- Topic No.5 : Transmission media: Guided media,Wireless media
- Topic No.6 : Transmission modes: Multiplexing
- Topic No.7 : Switching: Circuit switching,Message switching,Packet switching

Unit No.2 Network reference models

- Topic No.8 : OSI reference model
- Topic No.9 : TCP/IP reference model
- Topic No.10: Comparison of OSI & TCI reference model
- Topic No.11: Ellipse generating algorithms
- Topic No.12: Connection oriented networks: X.25 ,Frame relay,ATM
- Topic No.13: Network hardware components: Connectors,Transceivers,Repeaters,Hubs,Network interface cards & PC cards,Bridges,Switches,Routers,Gate

Unit No.3 Framing & Error control

- Topic No.14: Framing techniques
- Topic No.15: Error control: Error detection & correction,Hamming method,CRC & checksum
- Topic No.16: Data link control
- Topic No.17: Acknowledgments
- Topic No.18: Medium access control & LAN's: Multiple access protocol of MCA sub layer ,ALOHA,1-persistent,P-persistent & non-persistent CSMA,CSMA/CD
- Topic No.19: Collision free protocols
- Topic No.20: Limited contention protocols
- Topic No.21: IEEE Standard 802 for LAN's

Unit No.4 Routing

- Topic No.22: Deterministic & Adaptive routing
- Topic No.23: Centralized & distributed routing
- Topic No.24: Shortest path
- Topic No.25: Flooding
- Topic No.26: Flow based
- Topic No.27: Optimal
- Topic No.28: Distance vector
- Topic No.29: Link-state
- Topic No.30: Hierarchical
- Topic No.31: Routing for mobile hosts



PM

COLLEGE OF ENGINEERING

A Unit of Puran Murti Educational Society
Approved by AICTE, Ministry of HRD, Govt. of India,
Affiliated to Deenbandhu Chhotu Ram University of Science & Technology

- Topic No.32: Broadcast & multi-cast routing
- Topic No.33: Congestion control
- Topic No.34: Principle of congestion control
- Topic No.35: Traffic shaping
- Topic No.36: Choke packets
- Topic No.37: Load shading
- Topic No.38: RSVP

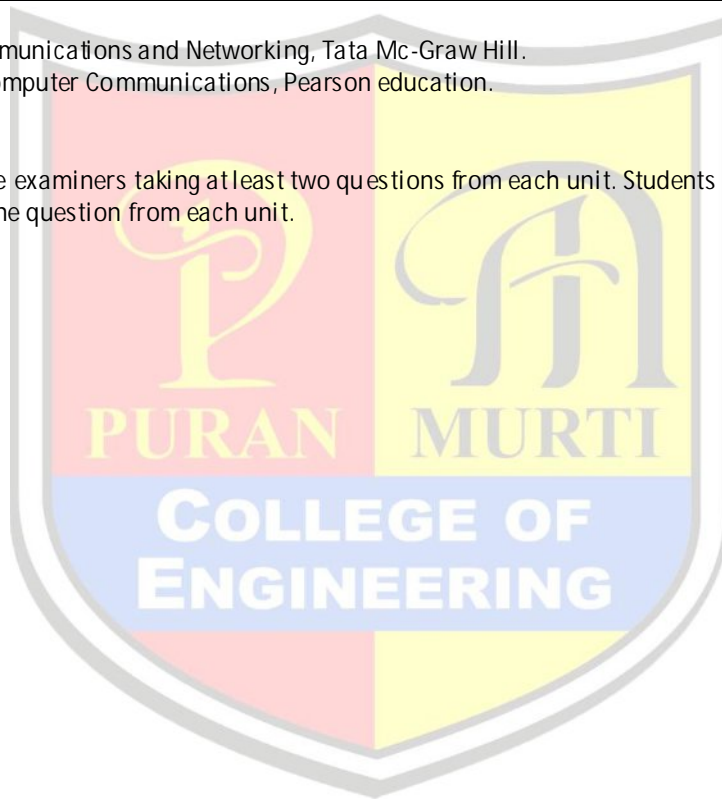
Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3hrs	100

TEXT/REFERENCE BOOKS:

1. Behrouz, Forouzan, Data communications and Networking, Tata Mc-Graw Hill.
2. William Stallings, Data and Computer Communications, Pearson education.

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 5th Semester

Subject: Visual Programming (Theory)

Subject Code: BCA-307B

Detailed Content

Unit No.1 The VB Integrated Development Environment

Topic No.1 : Menu Bar

Topic No.2 : Context Menus

Topic No.3 : Tool Bar

Topic No.4 : Project explorer

Topic No.5 : Properties window

Topic No.6 : Form designer

Topic No.7 : Immediate window

Topic No.8 : Object browser

Topic No.9 : Code editor window

Topic No.10: Form layout window

Topic No.11: Locals & watch windows

Topic No.12: customizing the environment

Topic No.13: The VB language and its elements:

Variables, Constants, Arrays, Collection, Subroutines, Functions, Arguments, Control Structures

Unit No.2 Concepts of object based event oriented languages

Topic No.14: Method

Topic No.15: Statement

Topic No.16: Properties and events

Topic No.17: Developing VB project /application

Topic No.18: Design the user interface

Topic No.19: User input event handling

Topic No.20: Comparison of visuals & non-visuals architecture

Unit No.3 Visual basic building blocks & default controls

Topic No.21: Forms

Topic No.22: Using controls

Topic No.23: Exploring properties

Topic No.24: Methods & events

Topic No.25: Introduction to Intrinsic controls

Topic No.26: Working with text

Topic No.27: Working with choices

Topic No.28: Special purpose controls

Topic No.29: VB advance controls: Events, Menu bar, Popup menus, Tool bar, Message box, Built in dialog boxes, Creating MDI, Working with menus

Unit No.4 Visual basic & database programming

Topic No.30: Database models Visual data manager



- Topic No.31: Data control methods
- Topic No.32: Properties
- Topic No.33: Connectivity with database
- Topic No.34: Data bound controls
- Topic No.35: Working with remote data object(RDO)
- Topic No.36: ActiveX data object(ADO) data control

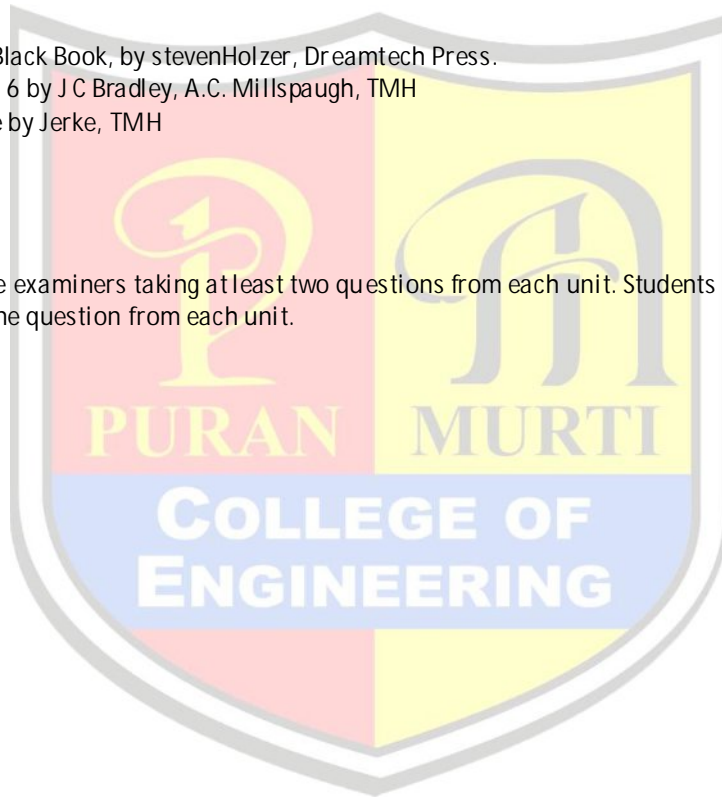
Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	

TEXT/REFERENCE BOOKS:

1. Visual Basic 6 Programming, Black Book, by Steven Holzer, Dreamtech Press.
2. Programming in Visual Basic - 6 by J.C. Bradley, A.C. Millspaugh, TMH
3. VB-6 The Complete Reference by Jerke, TMH

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 5th Semester

Subject: Web Technologies (Theory)

Subject Code: BCA-309B

Detailed Content

Unit No.1 Philosophy of .NET

- Topic No.1 : Origin of .NET technology
- Topic No.2 : Understanding .NET platform
- Topic No.3 : Benefits & Limitation of .NET
- Topic No.4 : Building blocks of .NET framework
- Topic No.5 : .NET programming languages
- Topic No.6 : .NET types and .NET namespace

Unit No.2 Visual Studio .NET and its major components

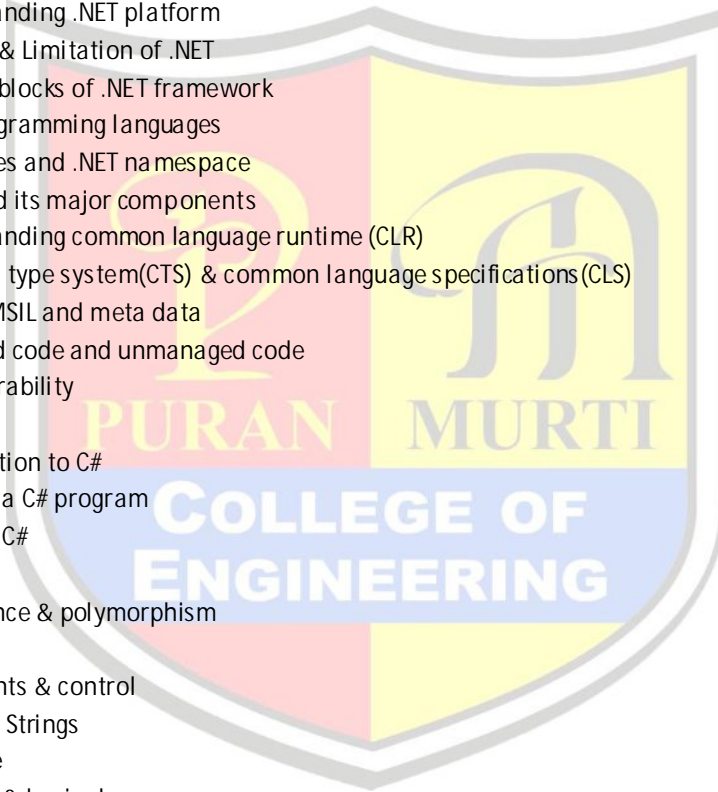
- Topic No.7 : Understanding common language runtime (CLR)
- Topic No.8 : Common type system(CTS) & common language specifications (CLS)
- Topic No.9 : Role of MSIL and meta data
- Topic No.10: Managed code and unmanaged code
- Topic No.11: Interoperability

Unit No.3 C# programming

- Topic No.12: Introduction to C#
- Topic No.13: Creating a C# program
- Topic No.14: Types in C#
- Topic No.15: Classes
- Topic No.16: Inheritance & polymorphism
- Topic No.17: Methods
- Topic No.18: Statements & control
- Topic No.19: Arrays & Strings
- Topic No.20: Interface
- Topic No.21: Abstract & basic classes
- Topic No.22: Statements & controls
- Topic No.23: Exception & Error handling in C#

Unit No.4 ADO.NET

- Topic No.24: Comparison of ADO and ADO.NET
- Topic No.25: Architecture of ADO.NET
- Topic No.26: .NET data provider
- Topic No.27: Data adapter
- Topic No.28: Data set
- Topic No.29: Data row
- Topic No.30: Data column
- Topic No.31: Data relation





Topic No.32: Command

Topic No.33: Data reader

Topic No.34: Introduction to data access with ADO.NET

Topic No.35: Components of ADO.NET

Study Scheme				Evaluation Scheme			Total Marks
Lectures per week				Internal Assessment	External Assessment (Examination)		
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
3	1	-	4	25	75	3 hours	100

TEXT/REFERENCE BOOKS:

1. C#- Ebalaguruswamy, TMH.
2. ASP.NET -Black Book-dreamtech Press
3. Asp.NET-Unleashed-Pearson

NOTE:

Eight questions will be set by the examiners taking at least two questions from each unit. Students will be required to attempt five questions in all taking at least one question from each unit.





SYLLABUS: BCA

Department: Bachelor of Computer Applications – 5th Semester

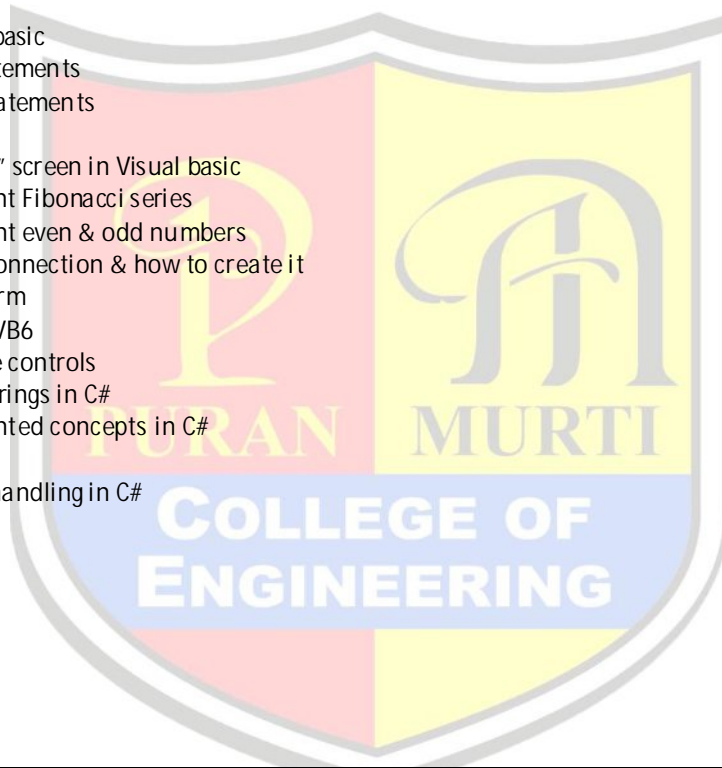
Subject: Visual Programming & Web Technologies LAB

Subject Code: BCA-327B

Detailed Content

List of Programs:

1. Introduction to Visual basic
2. Explain conditional statements
3. How to use Iterative statements
4. Design a calculator
5. How to create a "Hello" screen in Visual basic
6. Write a program to print Fibonacci series
7. Write a program to print even & odd numbers
8. How to use database connection & how to create it
9. How to use .NET platform
10. How to create form in VB6
11. How to use VB advance controls
12. How to use Arrays & Strings in C#
13. How to use object-oriented concepts in C#
14. How to use ADO.NET
15. How to use Exception handling in C#



Study Scheme				Evaluation Scheme			Total Marks
Lectures per week		Internal Assessment		External Assessment (Examination)			
L	T	P	Credits	Max. Marks	Max. Marks	Exam Duration	
		2	1	20	30	3 hours	50

NOTE:

Students are required to attempt at least 10 exercises based on the syllabi of subject BCA-307 & BCA-309. The exercises should be relating with the experiments based on VB, ASP .Net